



December 2006

A RESOURCE FOR JOB CORPS ACADEMIC & CAREER TECHNICAL INSTRUCTORS

## Memory Difficulties for Students with Learning Disabilities – Part II

In our last newsletter, we learned about the memory system, what a neurological “glitch” in the memory system might look like, and how we might support and/or accommodate some of the barriers manifested by students who have memory difficulties. In this edition, we are going to discuss metacognitive strategies—what they are and how they can support students with learning disabilities.

### Metacognition, Metamemory, Meta what?

*Metacognition* means thinking about cognition (memory, perception, calculation, association, etc.) itself or thinking/reasoning about one's own thinking.

*Metamemory* means awareness of and/or thinking about one's own memory system and *Metaknowledge* means awareness of or knowledge about knowledge. You get the point.



Why is this important? Studies have shown that learners who have greater metacognitive abilities tend to be more successful

thinkers and learners. What we are really referencing here is how to help students “learn how to learn.” So, how do we start teaching students how to learn?

1. Assist the student in identifying and understanding the manifestations of his/her learning disability (e.g., struggle with remembering math facts, struggle keeping up with personal items, etc.).
2. Teach the student metacognitive strategies. Have the student practice the use of these strategies in the instructional environment and provide ongoing modeling and guidance as necessary.

\* James Madison University, Math VIDS, 2006, <http://coe.jmu.edu/mathvidsr/Default.htm>, Retrieved December 2006.

\*\* Mercer, C.D., & Mercer, A.R. (1993). *Teaching students with learning problems* (4th ed.). Upper NY: Macmillan Publishing Co.

### Metacognitive Strategies\*

Two important characteristics of any effective metacognitive strategy are that it must

- Be memorable
- Accurately represent the learning task

Some of the most common metacognitive strategies come in the form of mnemonics, which are meaningful words where the letters in the word each stand for a step in a problem-solving process or for important pieces of information about a particular topic of interest. Metacognitive strategies can be easy to remember phrases or pictures that are easy to recall. For example, you may remember the names of the Great Lakes through the mnemonic “HOMES:” Huron, Ontario, Michigan, Erie, and Superior.

Metacognitive strategies provide students an efficient way to acquire, store, and express information and skills.\*\* For many students who have learning problems, their inability to efficiently retrieve information previously stored in memory negatively impacts their ability to accurately express what they know. Well developed metacognitive strategies aide such information retrieval for these students.

Students who have learning problems also tend to be passive learners. The key to the success of metacognitive strategies is that when they are taught appropriately, they assist learners who are dependent on high levels of teacher support to become independent learners. When students are (1) directly taught the strategy, to include its purpose and use, and (2) provided opportunities to practice using the strategy, they possess a powerful learning tool that builds learning independence. Confronted with a problem-solving situation, these students can now implement the appropriate metacognitive strategy when they have difficulty remembering how to solve a particular problem. Therefore, instead of relying on the teacher for assistance, they can independently help themselves.

## Job Corps Resources

### Job Corps DisABILITY Website

<http://jcdisability.jobcorps.gov/>

### Job Corps LD & AD/HD Website

<http://jccdrcl.jobcorps.gov/ld>

### Job Corps Health & Wellness Website

<http://jchealth.jobcorps.gov>

## Additions to the Supporting Students with LD Website

PowerPoint presentation from  
*Learning Disabilities 101*  
Webinar

Instructional Staff Newsletter-  
*Memory Difficulties for*  
*Students with Learning*  
*Disabilities – October 2006*

## We would like to hear from you!

Send your questions, case scenarios, or strategies and accommodations suggestions that have proven successful in your classroom or training environment to

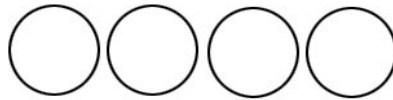
[debbiemjones@adelphia.net](mailto:debbiemjones@adelphia.net).

## Examples of Metacognitive Strategies

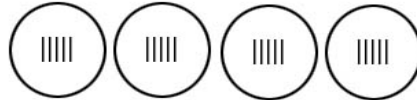
### Multiplication

$4 \times 5 = \underline{\quad}$  – "four groups of five equals..."

1. Student represents groups with circles.



2. Student represents objects within groups with tallies.



3. Student totals tallies and writes answer.

$4 \times 5 = 20$  – "four groups of five equals twenty"

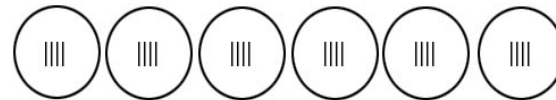
### Division

$24 \div 4 = \underline{\quad}$

1. Student draws tallies to represent dividend ("24").



2. Student circles tallies by the value of the divisor ("4").



3. student counts number of circles that represent the quotient ("6")  
 $24 \div 4 = 6$

## Important Points to Remember

1. Metacognitive strategies are taught using explicit teaching methods.
2. Metacognitive strategies are memorable.
3. Metacognitive strategies incorporate both student thinking and student actions necessary for performing target skill.
4. Students need ample practice opportunities to master use of a metacognitive strategy.
5. Student memory of a metacognitive strategy is enhanced when provided with individual strategy cue sheets and/or when the metacognitive strategy is posted in the classroom.
6. Monitor student use of strategies and reinforce appropriate use of strategies.

*[Adapted from James Madison University's Math VIDS website.]*

*"It is important to remind people that children with learning disabilities are among our brightest and most gifted."*

-David Neeleman, CEO, JetBlue Airways